

*Title:*

**“Thoughts about an integrated strategy  
for nuclear cooperation with Russia”**

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*Submitted to:*

**The Nonproliferation Review  
Summer 2001  
September 7, 2001  
Washington, D.C.**

<http://lib-www.lanl.gov/la-pubs/00818417.pdf>

# **"Thoughts about an integrated strategy for nuclear cooperation with Russia"**

**Siegfried S. Hecker  
Los Alamos National Laboratory**

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# Communism falls - August 1991

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Photo by Dmitry Donskoi / AP



Photo by Vladimir Filonov / MT

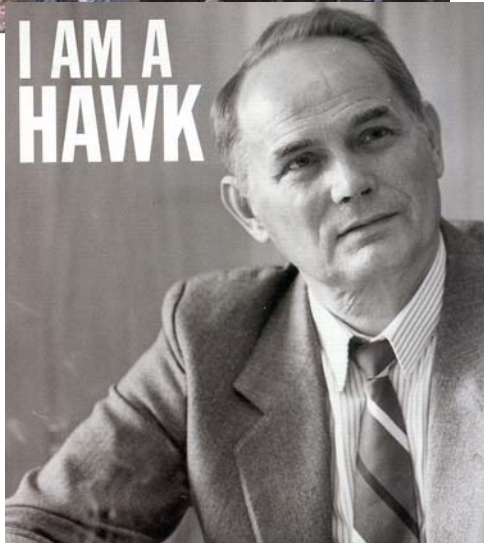


Photo by Vladimir Filonov / M



Photo by Vladimir Filonov / MT



# A remarkable spirit of cooperation



Lab-to-lab



CTR



Semipalatinsk



Sapphire



# Nuclear cooperation with Russia - 10 years later

## Good news

- Warhead reductions
- WHs returned from Belarus, Ukraine, Kazakhstan
- Some infrastructure destroyed
- Modern safeguards in some nuclear facilities
- Fabric of arms control treaties strengthened
- Lots of cooperation in early days
- Early partnerships - bank account of good will
- Russia's economy is up - less stress on system

## Bad news

- Still lots of warheads
- Nuclear materials remain in these states
- Much of rest of infrastructure is decaying
- Much remains - defense facilities at standstill
- Fabric appears to be unraveling now
- Security services closing doors
- Bank account depleted over past three years
- Economy is up - U.S. has less financial leverage

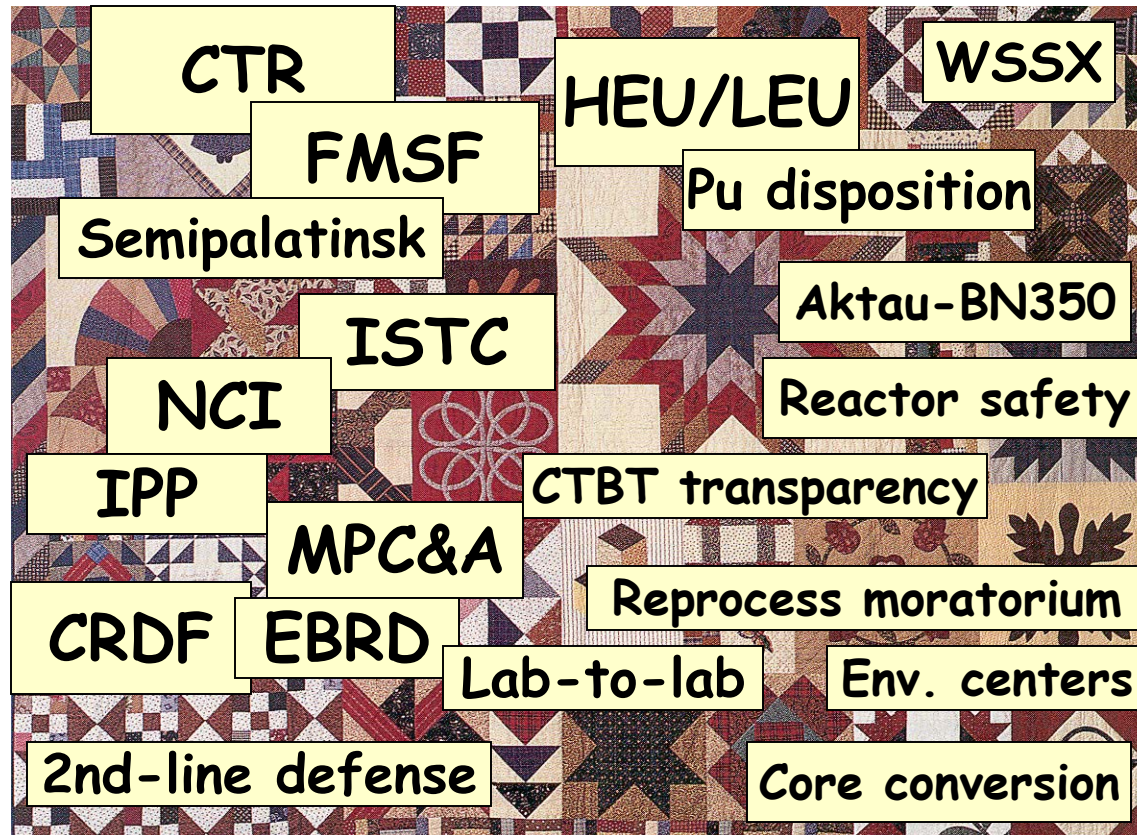
# Missed opportunities

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- Although, nothing really terrible happened in Russia's nuclear complex ---
- The underlying problems persist - nuclear complex is vastly oversized and overstaffed
- Spirit of cooperation necessary for progress is severely strained
- Many opportunities to reduce the threat and make fundamental inroads to global security were missed

# Current U.S. Government nuclear programs do not reflect a comprehensive, integrated strategy

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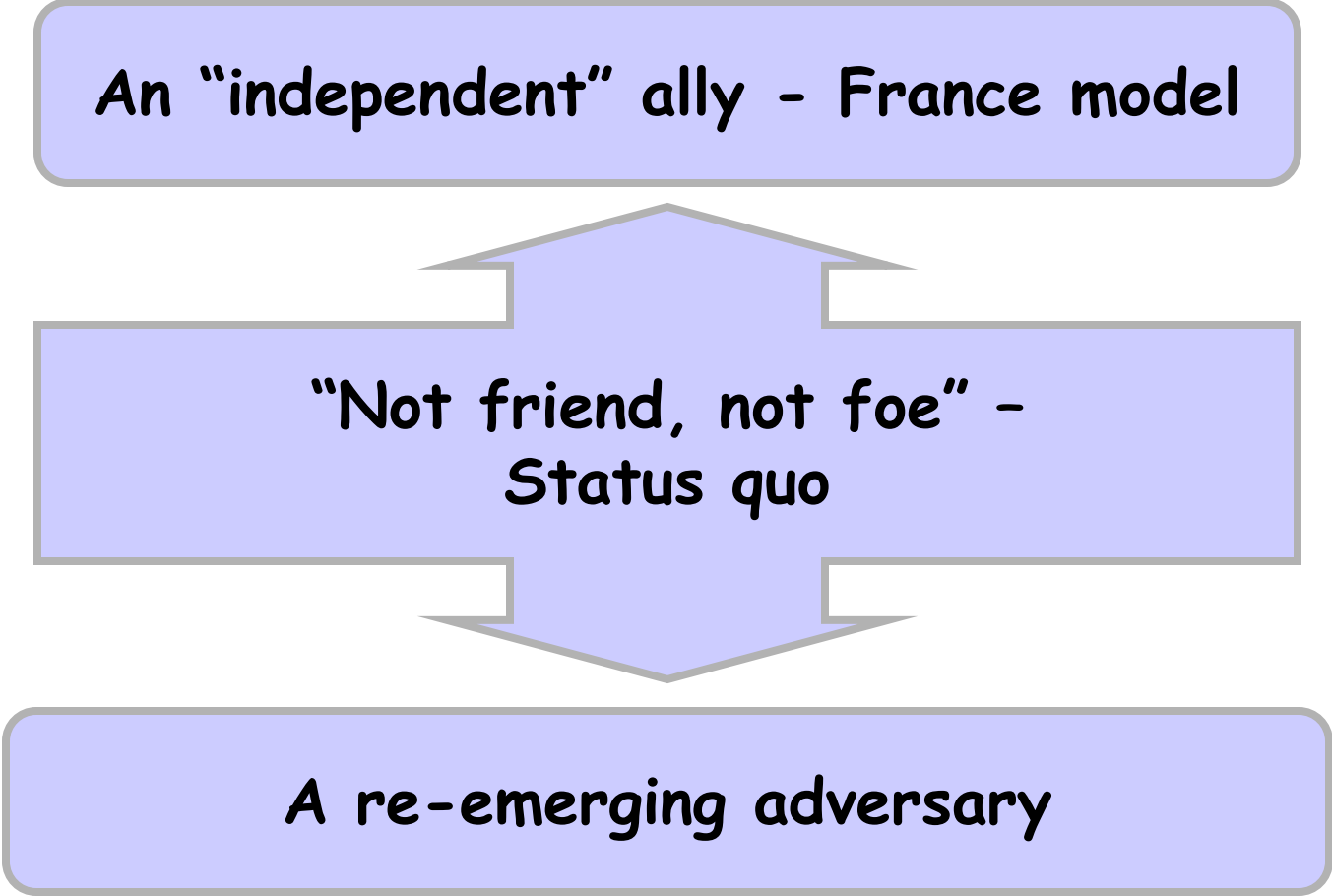




# Nuclear cooperation depends on U.S.-Russian relations

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An "independent" ally - France model



"Not friend, not foe" -  
Status quo

A re-emerging adversary



# A proposed hierarchy of threats

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- Avoiding a nuclear exchange
- Theft or diversion of nuclear weapons or nuclear materials
- Aggressive nuclear exports
- Leakage of nuclear weapons know-how
- Huge amounts of weapons-usable material and the size of the Russian nuclear weapons complex
- Nuclear accidents or environmental disasters

# Avoiding a nuclear exchange

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	Ally	Status-quo	Adversary
Military cooperation			
Weapons safety and security exchange			Limited exchange
Stewardship technical cooperation			International only
Test site collaboration		Information only	Limited information
Nuclear accident and emergency cooperation			Limited or no cooperation



**Strengthen**



**Caution**



**Phase out**

# Prevent theft or diversion

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	Ally	Status quo	Adversary
Secure vulnerable materials			
Kazakhstan nuclear materials			Without Russia
MPC&A - defense	Re-engineer	Re-engineer	Unlikely
MPC&A - navy			
MPC&A - civilian	Re-engineer	Re-engineer	
Downsize nuclear complex			
Nonconventional proliferation threats			
Second-line defense			



**Strengthen**



**Caution**



**Phase out**

# Prevent aggressive nuclear exports

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	Ally	Status quo	Adversary
Cooperative nuclear power development			Low level
Back-end fuel cycle collaboration			
Joint risk assessment			
Proliferation-resistant fuel cycle research			
Reactor safety research			
Joint export control center			



**Strengthen**



**Caution**



**Phase out**

# Prevent leakage of nuclear weapons know-how

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	Ally	Status quo	Adversary
Nuclear cities conversion	Industry commitment	Focus on down-sizing	Phase out
Joint defense conversion study			
Social infrastructure and people exchange			
Other nuclear and defense sites			



**Strengthen**



**Caution**



**Phase out**



# Downsizing - materials and production

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	Ally	Status quo	Adversary
Accelerate HEU conversion			
Fissile materials data exchange			
Plutonium disposition	Re-design	Re-design	
Innovative Pu solutions			Unlikely
Core conversion and civilian reprocessing moratorium	Re-direct	Re-direct	Re-visit
Production capacity parity			Unlikely



**Strengthen**



**Caution**



**Phase out**

# Prevent nuclear accidents and environmental disasters

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	Ally	Status quo	Adversary
Environmental R&D			
Nuclear accident prevention			
Health effects			
Nuclear complex cleanup	Internat'l effort	Internat'l effort	



**Strengthen**



**Caution**



**Phase out**

# Summary observations based on charts

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- Lots of greens, few reds - we have a lot more to gain than to lose by cooperation
- Not all programs require more money - all require Russian **cooperation and partnership**
- Some programs must be re-directed or re-engineered
- Some high-profile programs are far down the priority list - must re-design for greatest impact

# A path forward

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- If we are “threatened more by Russia’s weakness than her strength” - we must act accordingly
- Re-establish spirit of partnership in nuclear programs
- Develop a comprehensive, integrated strategy and set priorities accordingly
- Provide high-level bipartisan advocacy
- Insist on professional operations
  - World-class project operations
  - Constancy of purpose and continuity
  - Attract first-rate talent